

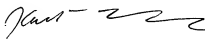
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PRE-APPEAL BRIEF REQUEST FOR REVIEW		Docket Number (Optional) SLA1347 (7146.0167)	
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Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.   This request is being filed with a notice of appeal.   The review is requested for the reason(s) stated on the attached sheet(s). Note: No more than five (5) pages may be provided.			
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## PRE-APPEAL BRIEF REQUEST FOR REVIEW

### Introduction

The applicant requests that the Review Panel withdraw the pending rejection of claims 1 and 2 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Zimmerman et al., U.S. Patent No. 7,213,820 in view of Wood, U.S. Patent No. 6,288,695, and in further view of Matsushima, U.S. Patent No. 5,976,086. The Examiner has stated that independent claim 4 is allowable, and that independent claim 3 would be allowable if rewritten in independent form.

Independent claim 1 recites the limitation of "alternatively increas[ing] or decreas[ing] the luminance output of a . . . pixel of said current frame, by overdriving a voltage to said pixel . . . to a current value automatically selected based upon: (i) at least one predicted displayed luminance value of said pixel in respective ones of at least one subsequent frame of said video image; *and* (ii) at least one previously displayed luminance value of said pixel in respective ones of at least one previous frame of said video image." (emphasis added). Stated simply, this limitation requires that an overdrive voltage to a current frame be automatically selected based upon *both* of a luminance of the pixel in a previous frame *and* a predicted luminance of the pixel in a *subsequent* frame. Claim 2 depends from independent claim 1.

The applicant respectfully submits that the rejection of claims 1 and 2 is improper for two independent reasons. First, the Examiner has not met the threshold burden of stating a prima facie case of obviousness because the asserted combination lacks any expected functionality. Rather, the Examiner simply dissects the claim into three parts, finds that each part *separately considered*, reads on a respective one of three references that are each directed to completely different technologies or problems. The Examiner makes no effort to show that the claim, read as a whole, is obvious. See MPEP at §2141.02 ("The question under 35 U.S.C.. § 103 is not whether the differences *themselves* would have been obvious, but whether the claimed invention *as a whole* would have been obvious.") (emphasis in original). In fact, the Examiner argues that a technique taught by a secondary reference reference, and which serves no apparent

utility to the invention disclosed in that primary reference, would be obvious simply because one of ordinary skill in the art *could* make the modification. See Final office Action dated September 21, 2010 at pp 7-8. An obviousness rejection requires more than this. See MPEP at § 2143.01 (The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.”)

Second, and perhaps more apparently, the Examiner has failed to cite a prior art teaching of basing an overdrive voltage to a pixel for a *current frame* on both a luminance of the pixel in a *previous frame*, and a predicted luminance in a *subsequent frame*. Instead, the Examiner’s combination merely asserts basing a signal to a pixel for a current frame on whether the luminance for that pixel in a previous frame was higher or lower. See Final Office Action dated September 21, 2010 at p. 7 (analyzing only *two* frames, rather than the required *three*).

## **Argument**

### **1. The Examiner’s rejection lacks a cogent explanation of obviousness.**

The teachings of the three cited references Zimmerman, Wood, and Matsushima are completely unrelated to each other. Zimmerman discloses pre-processing techniques used to capture a 360-degree image intended to surround the viewer, when displayed. Zimmerman is only concerned with capturing an image and is unconcerned with overdrive techniques for LCD or other displays. Wood teaches a driving technique for modulating the voltage to a pixel *during* individual frames displayed on a luminescent-type matrix display, such as a plasma display. In particular, Wood discloses a technique of addressing a driving signal having a plurality of bits to a gate, in which the gate voltage varies depending on which bit of the signal for that frame is being read. See Wood at col. 5 line 26 to col. 6 line 46 (e.g. “It will be apparent that increasing the pixel intensity *during* display of a frame decreases the amount of time needed for the frame.”).

Matsushima discloses techniques for processing *medical ultrasound images of the interior of a living person*, and in particular discloses averaging luminance values from sequential captured frames to remove *thermal and other sources of noise unique to ultrasonic images*, but in a manner that compensates for the fact that a person's organs are moving even when the person remains still, meaning that the image luminance varies greatly between the averaged frames. See Matsushima at col. 7 line 37 to col. 9 line 47. It is this disclosure of Matsushima upon which the Examiner relies, although somewhat inconsistently, in that to find the actual limitation at issue, the Examiner appears to rely upon the improved technique of only averaging the luminance of two sequential frames if the luminance of a current frame drops relative to that of a previous frame,<sup>1</sup> but relies upon a teaching of an ostensibly inferior technique to show a reason to combine. Compare Final Office Action dated September 21, 2010 at p. 7, lines 1-8 with lines 9-15.

The Examiner's combination of Zimmerman and Wood is premised on the assumption that the 360-degree images captured by Zimmerman could be displayed on the type of luminescent matrix disclosed by Wood. Even assuming the rationality of this combination of Zimmerman and Wood, that combination is clearly in conflict with Matsushima in that the combination of Zimmerman and Wood teaches the display of an image captured by a camera at the center of a 360-degree panoramic, while the filtering or averaging techniques taught by Matsushima are only relevant to an *ultrasound image* which by definition is not captured by a 360-degree panoramic from inside a person's body. In other words, the averaging process disclosed by Matsushima is only disclosed as being useful to mitigate the thermal noise resulting from taking an ultrasound of a human body. The combination of Zimmerman and Wood would never be used to take a 360-degree panoramic from inside a person's body, i.e. it is not an ultrasound. Therefore, one of ordinary skill in the art would find no utility in using the averaging

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<sup>1</sup> The technique of Matsushima is apparently directed to the feature of ultrasounds where luminance will plunge to black or near black. Matsushima therefore discloses averaging the luminance of a frame where the plunge occurs relative to a previous frame to achieve continuity of a moving image, but not averaging when the luminance of a current frame has risen from the previous frame, presumably to improve brightness. This particular averaging technique, essential to the Examiner's rejection, has no disclosed utility in any application aside from ultrasound imaging.

process of Matsushima in the combination of Wood and Zimmerman. In particular, there is no disclosure of any utility of the particular averaging operation that only occurs when luminance drops from one frame to the next as *that* averaging operation is *uniquely directed* to ultrasound images.

The Examiner's only response to these arguments is to first note that the averaging techniques disclosed by Matsushima are well known to those skilled in the art and would have been "applicable to the base process [of Zimmerman and Wood]." This fails to address the applicant's point which is that these techniques (both selectively averaging and alternatively always averaging) are only disclosed as being known to those in the art for correcting noise in ultrasound images. The Examiner provides no explanation as to why the selective averaging technique of Matsushima would be applicable to the "base process" of Zimmerman as modified by Wood, but merely asserts it without the required explanation of obviousness.

**2. The Examiner has failed to show the limitation of overdriving in a current frame based on predicted luminance of a subsequent frame.**

Even assuming for the sake of argument that the Examiner's combination is sensible, it still only discloses overdriving a pixel of a current frame based on the luminance of that pixel in a previous frame, i.e. if the luminance of a current frame rises relative to the previous frame the voltage to the pixel for the current frame does not get averaged with that of the previous frame, while if the luminance of a current frame falls relative to the previous frame the voltage to the pixel for the current frame does get averaged with that of the previous frame. The applicant believes that the Examiner seizes upon the words "previous" and "subsequent" in the prior art reference Matsushima, without recognizing that in that context, the term "subsequent frame" is the *current* frame being modified, i.e. the frame "subsequent" to the previous frame. In other words, claim 1 requires a current frame, a frame previous to the current frame, and a frame subsequent to the current frame – three frames total. Matsushima's averaging technique is only applied in reference to two frames, with the terms "subsequent frame" and "previous frame" merely defining the relative position between those two frames.

Therefore, even if the Examiner's combination of Zimmerman, Wood, and Matsushima proper, it still would not render the applicant's claim 1 obvious.

### **Conclusion**

For each of these reasons, claims 1 and 2 are not obvious over the cited prior art, and the Examiner's rejection of these claims should be reversed.

Respectfully submitted,

CHERNOFF, VILHAUER, MCCLUNG & STENZEL

Dated: December 8, 2010

By



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